DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002498
Date Inspected: 06-May-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1500
OSM Departure Time: 2200
Location: Shanghai, China

CWI Name: Huang Wen Pang

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower/OBG

Summary of Items Observed:

On this date, Caltrans Office of Structural Materials (OSM) Quality Assurance (QA) Inspector Edward Leach was present to randomly observe and document the welding and Quality Control (QC) functions performed by ZPMC personnel relative to the fabrication of SAS Superstructure project. While on site, the QA Inspector noted the following work.

New OBG Assembly Shop

The QA Inspector performed random observations to the new OBG shop and observed that ZPMC UT personnel Li Liming was in the process of performing ultrasonic testing (UT) on side panel weld splices for SEG018A-002 (SP66A/SP78A) and SEG018A-001 (SP54A/SP66A). The QA Inspector observed ZPMC UT personnel perform the UT for 100% of the weld length (10,100mm). Upon completion of the UT, ZPMC personnel Li Liming accepted both welds. The QA Inspector later performed UT for approximately 10% of the weld length for both welds, using a 70 degree shear wave transducer. No relevant indications were noted upon completion of the UT and a TL-6027 UT report was generated on this date for these items.

Later in the shift, the QA Inspector observed ZPMC UT personnel Li Liming perform 100% UT for the weld splice on side panel segment SEG020A-020 and SEG020A-021. As the UT progressed, ZPMC marked up several rejectable indications in the welds. The welds were not accepted by ZPMC personnel and the QA Inspector did not perform 10% UT for these segments.

Bay 7

The QA Inspector performed random observations to bay 7 and observed ZPMC personnel in multiple locations performing fit-up, tack welding and production welding on various floor beam sub-assemblies. The QA Inspector

was informed by ZPMC CWI personnel Huang Wen Pang that welding personnel are currently performing fillet welding for the stiffener plates on floor beam sub-assembly FB004-010-007 and FB005-010-007. The QA Inspector identified the welder as Zhang Qing Quan, weld identification 044774 and the ZPMC QC Inspector as Wang Sai Fa. Mr. Wang Sai Fa was observed verifying electrical welding parameters, travel speed and interpass temperatures on various weld joint locations as the welding progressed. The welder was using the Flux Cored Arc Welding (FCAW) process in the vertical and horizontal positions with 71H, 1.4mm diameter electrode. The welding was being performed to the requirements of welding procedure specification (WPS) WPS-B-T-2132-3. The welder was observed using proper interpass cleaning methods with a wire brush and slag hammer. The work in progress appeared to comply with the contract specifications.

Also in bay 7 the QA Inspector observed ZPMC welding personnel Huang Xin Lan, welder identification 044815 utilizing the submerged arc welding (SAW) process in the flat (1G) position with JW-3, 4.8mm electrode to complete welding for a weld splice on diaphragm plate FB016-011-026. The QA Inspector also noted the welding was performed to the requirements of WPS-B-T-2221-B-L2C-S-1 and observed ZPMC CWI personnel Huang Wen Pang verify electrical welding parameters, travel speed and interpass temperature. The work in progress appeared to comply with the contract specifications.

Bay 8

The QA Inspector performed a random observation to bay 8 and did not observe production welding for the internal tower diaphragm plates. At the time of this observation the QA Inspector observed ZPMC personnel performing fit-up operations for tower diaphragm plate SSD1-SA169A/B-1A. ZPMC personnel were in the process of setting up hydraulic jacking fixtures underneath the plates to correct any offset.

During later observations the QA Inspector observed ZPMC performing heat-straightening for various tower skin longitudinal stiffener and diaphragm plates and performing SAW welding for the weld splice on diaphragm plate SSD1-SA311A/B-1A (2A). At the time of observation, the plate was recently turned over to side B as ZPMC personnel were positioning the electric heating bands to bring the material back up to temperature before resuming welding. The QA Inspector identified the welder as Ma Ying, welder ID # 045270. The ZPMC CWI personnel monitoring welding for this location was identified as Wa Li Qing, 07120771. The QA Inspector also noted WPS-B-T-3221-B-U3c-S-1 as the welding procedure in use for this application. The work in progress appeared to comply with contract specifications.

The following digital pictures below detail some of the work observed on this date.

WELDING INSPECTION REPORT

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Summary of Conversations:

As noted above in report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Leach,Ed	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer